

# Shark Bytes

# The Team

Jered Angous, Daniel Arden, Alex King, Anthony Narvaez



Team Shark Bytes

**Colorado River Area Biologists Computer Aided Knowledge Entry System  
(CRAB CAKES)**

Team Mentor: Scott LaRocca

# Intro

We are working with multiple agencies, The Arizona Game and Fish Department, U.S. Geological Survey, and U.S. Fish and Wildlife Service

Clients: David Rogowski (AGFD), Maria Dzul (USGS), Pilar Rinker (USFWS)



USGS



# Problem Statement

Monitoring efforts are crucial for protecting the wildlife around the Colorado River and supporting the more than 40 million people that depend on those resources.

⇒ Our clients are at the frontlines of this endeavor.

## Current Workflow:



Catch fish from the Colorado River



Scan/Tag Fish and measure new data



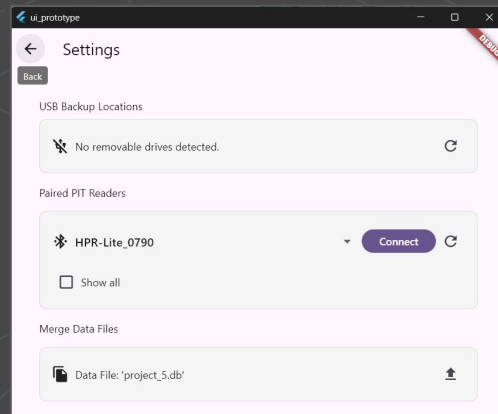
Record data using SHOALS, and upload to Database



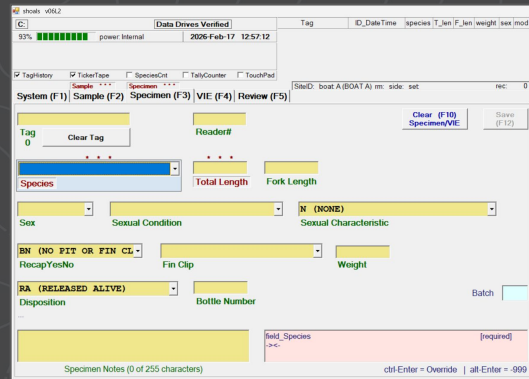
# Solution Overview

- A customizable set of fields so users can adapt it to their use case
- A robust backup system that saves to local storage and multiple USB drives
- Bluetooth compatibility with PIT Tag Readers
- A modernized UI
- Quality of life updates

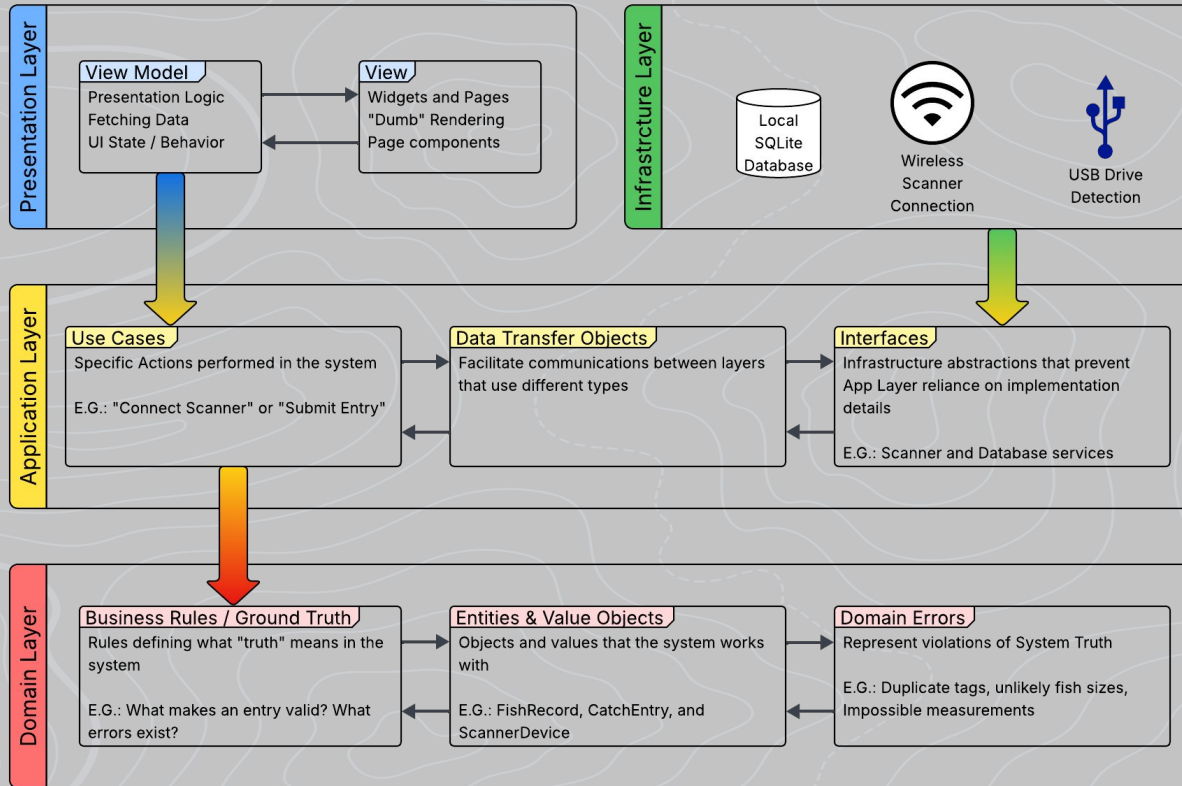
## CRAB CAKES



## Shoals



# Software Design Overview





# Challenges & Resolution

## Challenge:

Making the application compatible with a wide variety of schema structures

## Resolution:

Creating a graph representation of the schemas structure.

## Challenge:

Lack of access to historical catch data making outlier detection difficult

## Resolution:

Using already established attribute ranges to detect unlikely sizes

## Challenge:

Calling the repository update and delete functions from the data editor view

## Resolution:

Creating a RowIdentifier type and embedding it as a key in the grid library's rows

# Testing Plan

## Unit Tests:

Currently testing core modules relating to data integrity

Planning to increase unit test coverage before acceptance demo

## Integration Tests

Work on integration tests for data entry screen and data editing screen

## Usability Tests

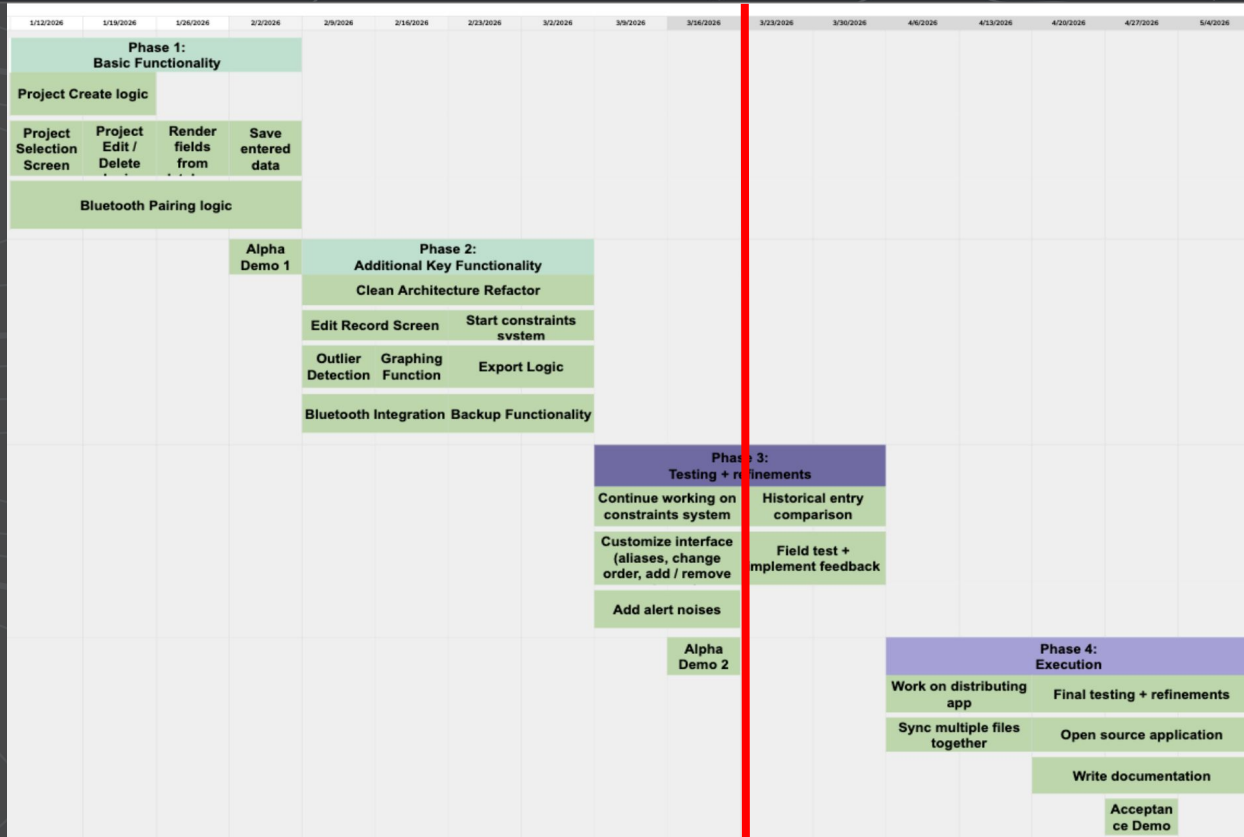
03/28/2026 - 03/29/2026:

In-field testing

Later date:

Office usability testing

# Schedule



# Conclusion

- Our Alpha 2 Demonstration was a success, and we are now preparing for the Acceptance Demonstration. We are confident we will be able to deliver all promised functionality to the clients by the end of the semester.





**Questions**  
**?**